DETECTING THE WEBSITE NAVIGATION BAR USING MAFDN

GANESH NOMULA,
Associate Professor,
Department of Electrical & Electronics Engineering,

ANAGANDULA NARESH
Assistant Professor,
Department of Electrical & Electronics Engineering,

Siddhartha Institute of Technology and Sciences,
Narapally, Hyderabad, Telangana – 500 088.

ABSTRACT

This document explains how to make minor adjustments to a website to make it better. We provide a Mathematical Approach for Detecting the Navigation (MAFDN) for optimizing user navigation on a website while keeping the existing structure as minimal as possible. Extensive tests on a publicly available real-world data set show that our technique not only improves user navigation considerably with minor changes, but also that it can be solved effectively. We also construct two evaluation metrics and utilize them to assess the performance of the enhanced website using real-world data. According to the evaluation results, user navigation on the new structure has significantly improved. Even more intriguing is the fact that Users who are extremely disoriented are more likely to benefit from the improved structure than users who are not seriously disoriented, according to our findings.

INTRODUCTION

Due to the Internet, people may now get knowledge and explore information on a never-before-seen scale. There were 1.73 billion Internet users globally in September 2009, an increase of 18% from 2008. The continually growing number of Internet users provides organisations with significant commercial opportunities. Retail e-commerce sales in the United States (excluding travel) totaled $127.7 billion in 2007, according to Grau, and are anticipated to reach $218.4 billion. To fulfil the expanding demands of online clientele, businesses are investing more in the development and upkeep of their websites. Total website operations spending increased in 2007, according to Internet Retailer, with one-third of site operators boosting spending by at least 11% over 2006.

Despite considerable and growing investments in website design, it is apparent that finding important information on a website is tough, and that creating good websites is not an easy effort.

According to Galletta et al., online sales lag behind those of brick-and-mortar establishments, with at least part of the gap explained by a key challenge buyers confront while shopping online. According to Palmer, poor website design has been a key role in a number of high-profile site failures. Even if the information is of high quality, users who have problems discovering the targets are more likely to depart a website.

LITERATURE SURVEY

The project intends to improve Web navigation efficiency by changing the Web structure. Mathematically determined navigation efficiency with and without target destination pages, e.g. for experienced and new users. The stability of the structure is considered to benefit experienced users in keeping their course. The implementation of a stability constraint can also help website designers manage the amount of effort required to keep a website up to date. This study proposes a mathematical programming technique for redesigning Web structure in order to boost navigation efficiency. The designer can specify the user requirements as well as the website structure's stability. When the user navigates to the desired location, an e-banking sample is displayed to show how the procedure works.

This study offers the advantage of analysing and improving navigation efficiency while also freeing the designer from the time-consuming chore of adjusting the structure during transformation. Analytical modeling-based approaches to website design have also been examined. A survey of Web metrics looks at fundamental graph characteristics that are relevant to website design and classifies a set of essential metrics for quantifying Web graph properties like page significance, page similarity, search and retrieval, usage characterization, and information theoretic properties in order to improve Web information access and use. Investigate crucial Web graph properties such as compactness and stratum, which together provide website designers with high-level support, when investigating the attributes of the Web graph. To determine page ranks, Brin employs a graph to replicate website structural structures. Investigate the web's linkages and compare various ranking systems after a few decades. Web mining techniques are also used to examine a website's content, structure, and usage. Kumar and colleagues propose a stochastic model for building a Web graph with statistically dependent edges and the capacity to dynamically add additional vertices over time.

METHODOLOGY

We offer a MAFDN for improving website user navigation while minimising the current structure. Extensive experiments on a publicly available real-world data set show that our method not only significantly improves user navigation with small adjustments, but also that it can be solved effectively. In addition, we create two assessment measures and utilise them to evaluate the

upgraded website's success using real data. The evaluation found that the revised structure significantly improves user navigation. Even more surprising, we noticed that those who are seriously disoriented are more likely to gain from the improved structure than people who are not.

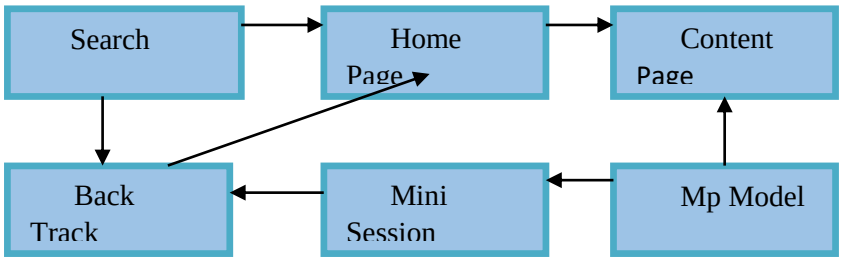

Figure 1: MAFDN Architecture

Web transformation, rather than personalising pages for individual users, involves changing the structure of a website to make navigation easier for a vast number of individuals. Fu and colleagues propose reorganising web pages so that users may acquire the information they need with fewer clicks. The new structure, however, may not be optimum because this strategy just evaluates local website structures rather than the overall site. Gupta et al. propose employing a heuristic method based on simulated annealing to relink web pages to improve navigability.

Backtracks are used to track a user's movements, with a backtrack being defined as a user returning to a previously visited website. The notion is that if users can't find the page they want, they'll return. As a result, a path is defined as a user-accessible series of pages without backtracking, similar to forward reference. Each backtracking point effectively marks the end of a voyage. As a result, the more paths a user takes to get their goal, the more the site structure deviates from what the user expects.

RESULT AND DISCUSSION

The purpose of this study was to see how well two common design patterns for navigating online retail websites performed. Browsers have been presented where they are in the site's structure as well as other possibilities using expanding hierarchies (as illustrated in Figure 2, left navigation bar). In the browser's current location hierarchy, breadcrumbs show all of the site's immediate super categories (see Figure 2, top navigation bar). Either of these methods can be used to navigate by selecting any of the visible connections. When you click on a link, you'll be sent to the super category's home page.

Figure 2. Control condition with no expanded hierarchies or breadcrumbs

CONCLUSION

In this paper, we provide a MAFDN for improving a website's navigation efficacy while restricting changes to its current structure, a critical topic that has gotten little attention in the literature. Our method is particularly well suited to informational websites with content that does not change over time. It enhances rather than reorganises a website, making it suitable for long-term website upkeep. According to tests on an actual website, our methodology dramatically enhanced user navigation by adding only a few extra links.

References

1. D.F. Galletta, R. Henry, S. McCoy, and P. Polak, “When the Wait Isn’t So Bad: The Interacting Effects of Website Delay, Familiarity, and Breadth,” Information Systems Research, vol. 17, no. 1, pp. 20-37, 2006.
2. J. Palmer, “Web Site Usability, Design, and Performance Metrics,” Information Systems Research, vol. 13, no. 2, pp. 151-167, 2002.
3. V. McKinney, K. Yoon, and F. Zahedi, “The Measurement of Web-Customer Satisfaction: An Expectation and Disconfirmation Approach,” Information Systems Research, vol. 13, no. 3, pp. 296- 315, 2002.
4. T. Nakayama, H. Kato, and Y. Yamane, “Discovering the Gap between Web Site Designers’ Expectations and Users’ Behavior,” Computer Networks, vol. 33, pp. 811-822, 2000.
5. M. Perkowitz and O. Etzioni, “Towards Adaptive Web Sites: Conceptual Framework and Case Study,” Artificial Intelligence, vol. 118, pp. 245-275, 2000.